IN THE TITLE

Please amend the title as follows:

~~A~~ Rotary Machine ~~(Embodiments), Driving Member for a Rotary Machine, and an Engine Plant Using the Same~~

IN THE SPECIFICATION

Please amend the first paragraph on page 1 as follows:

This ~~group of~~ inventions relates to power engineering, and in particular, to engine building, and more specifically, to rotary internal combustion engines, and pneumatic and hydraulic pumping units.

Please amend the paragraph bridging pages 1 and 2 as follows:

This technical effect is achieved in ~~a first embodiment of the rotary machine comprising a housing in the form of two intersecting parts of cylinders having different diameters and parallel axes; a rotor received in the housing coaxially to the smaller diameter cylinder and comprising at least two segmental rotor parts interconnected by annular rotor covers, and at least two pairs of annular elements interconnected in pairs to be able to move in annular guides provided in the rotor covers; pivotal members placed between the annular elements of each pair; a driving member received in the openings of the pivotal elements for movement therein, the axis of rotation of the driving member being coincident with the axis of the large inner cylindrical surface of the housing; the driving member having its working surfaces in contact with the inner working surfaces of the segmental rotor parts, the annular rotor covers, the inner end face surfaces of the large cylindrical surface of the housing to produce inner variable volume working chambers between the segmental rotor parts and the driving member, and outer variable volume working chambers produced between the driving member, the inner surfaces of the housing, and the outer surfaces of the rotor~~ a rotary machine comprising a housing and a rotor received therein, characterized in that the inner surface of the housing is shaped by two intersecting cylinder parts having different diameters and parallel axes; the rotor received in the housing is

coaxial with the smaller-diameter cylinder and has at least two segmental rotor parts mounting annular rotor covers and at least two pairs of annular elements connected in pairs and adapted to turn relative to the segmental rotor parts; the machine further comprises pivotal elements accommodated between the annular elements of each pair; a driving member, whose axis of rotation is coincident with the axis of the larger-diameter cylinder and which is received in the openings of the pivotal elements for movement therein to bring ~~its~~ working surfaces of said driving member, during rotation thereof, into contact with inner working surfaces of the segmental rotor parts, rotor covers, and an inner end-face and said cylindrical surfaces of the housing in order to define inner variable-volume working chambers between the segmental rotor parts and the driving member, and outer variable-volume working chambers between the driving member, the inner surfaces of the housing, and the outer surfaces of the rotor.

Please amend the second and third full paragraphs on page 2 as follows:

In one of the embodiments of this invention, the pairs of annular elements can move in ~~the~~ inner annular guides of the segmental rotor parts and engage the ~~same~~ later alternately.

In another embodiment of this invention, the pairs of annular elements embrace the segmental rotor parts and enter into contact with the inner cylindrical surface of a smaller-diameter housing and are capable of moving in the annular guides of ~~the~~ segmental rotor parts and being engaged by the ~~pairs of annular elements~~ segmental rotor parts.

Please delete the fifth and seventh full paragraphs on page 2.

Please amend the first full paragraph on page 3 as follows:

The end-faces ~~parts~~ of the pivotal elements can be positioned at points where the annular elements are connected to the rolling-contact bearings.

Please amend the third full paragraph on page 3 as follows:

The annular elements can be provided with reinforcing and cooling plates. ~~and the housing can have coolant passages.~~

Please delete the seventh through the eleventh full paragraphs on page 3

Please delete the first through the fifth full paragraphs on page 4.

Please amend the sixth paragraph on page 4 as follows:

The ~~technical effect of the claimed invention is also achieved by that the~~ driving member of the rotary machine comprises a housing, wherein each part thereof is provided, between its axis of rotation thereof and one of the working surfaces designed to engage the inner cylindrical surface of the housing, with inner chambers, one of which is a first combustion working chamber and the ~~other~~ second chamber is designed to be filled with ~~the~~ working fluid to subsequently purge the first working chamber that is designed for a fuel mixture to be injected thereinto and for combustion products to be discharged into ~~the~~ a main working chamber of the rotary machine.

Please delete the eighth through the tenth full paragraphs on page 4.

Please amend the eleventh full paragraph on page 4 as follows:

Figs. 1 to 7 illustrate a first ~~embodiment of the claimed~~ rotary machine, wherein rotor elements are designed as at least two segments having annular guides interconnected by annular elements provided for movement in the annular guides of the segments.

Please amend the fourteenth full paragraph on page 4 as follows:

Figs. 12 and 13 show relative positioning of rotary machine elements ~~in the first embodiment of this invention,~~ with rotor segments embraced by annular elements movable in the annular guides of the rotor segments.

Please delete the fifteenth full paragraph on page 4.

Please amend the paragraph bridging pages 4 and 5 as follows:

Figs. ~~20 to 24~~ 14 to 18 show relative positioning of rotary machine elements ~~in the first embodiment of this invention,~~ with rotor segments embraced by annular elements moving in annular guides of one another.

Please amend the first through the fourth full paragraphs on page 5 as follows:

Fig. ~~25~~ 19 shows ~~the first embodiment of~~ the rotary machine operating as a pump.

Fig. ~~26~~ 20 shows pivotal elements provided with rolling-contact bearings.

Fig. ~~27~~ 21 shows an engine plant using rotary machines as claimed herein.

Fig. ~~28~~ 22 shows an embodiment of a rotary machine provided with a three-lobed driving member and three rotor segments.

Please amend the fifth full paragraph on page 5 as follows:

A volume-displacement rotary machine, wherein the driving member (axis AA') interacting with a fluid medium (such as air) and transmitting motion rotates in a circular path about a fixed axis O*, is a continuous-action machine developed for converting compressed medium energy to mechanical energy, or vice versa. The drawings show machine components designated as follows: A rotary machine comprises driving member 1; cylindrical pivotal element 2; main working chamber 3, twin working chamber 4; working fluid compression chamber 5; twin working fluid compression chamber 6; annular rotor elements 7; segmental components (segments) 8 of the rotor; strips 9; purge ports 10; cylindrical portion 11 of the larger-diameter housing; cylindrical portion 12 of the smaller-diameter housing; distinct points "a" and "d" of segment 8; distinct points "b" and "c" of driving member 1, line 13 of possible configuration of compression chambers 5 and 6 ~~(in the plane of Fig. 1)~~ in a diesel-powered embodiment of the rotary machine; flange cover 14 of the rotor; flange cover 15 of the housing; reinforcing (cooling) plates 16 of annular element 7; working chamber 17 of the driving member; twin working chamber of the driving member (not shown in Figs. 10 and 11); one of nozzle orifices 18 for exhaust from driving member 1, with the second orifice not shown in the figure (the orifices are positioned symmetrically about the center of rotation O* of driving member 1); passage 19 for exhaust from driving member 1; twin passage for exhaust from driving member 1 (not shown in the figure); arrows 20 showing movement of the working fluid in driving member 1: chamber 21 to purge working chamber 17 of driving member 1; twin chamber (not shown in the figure) to purge working chamber 17 of driving member 1; valve 22 to discharge working fluid from working chamber 17 of driving member 1 into chamber 3; twin valve as the above valve to discharge working fluid from the twin working chamber (not shown in the figure) of

driving member 1 into chamber 4; valves 23 to inject working fluid into chambers 17 and 21; twin valve to inject working fluid into chambers (not shown in the figure); valve 24 and twin valve, which are intake valves of passage 19; valve 25 to purge chamber 17; twin valve to purge twin chamber; valve 26 to discharge working fluid from chamber 6 into chamber 3; and twin valve to discharge working fluid from chamber 5 into chamber 4.

Please amend the first and second full paragraphs on page 6 as follows:

In the first embodiment of the RMKOlgA rotary machine, the rotor consists of at least two segmental components (segments) 8 and at least two pairs of annular (annular sector) elements 7. Figs. 1-7, 12, 13, and 20-25 illustrate an embodiment having two ~~segments~~ segmental rotor parts 8 and two annular elements 7. Segmental rotor parts 8 in the embodiment of Figs. 1-7 are fastened together at the ends by circular rotor covers 14 or made integrally therewith.

Each pair of annular elements ~~3~~ 7 is fastened at the ends with strips 9 or is made integrally with ~~the rotor~~ them and has its end portions received in annular guides (recesses) of rotor covers 14.

Please amend the eighth full paragraph on page 6 as follows:

Figs. ~~20 to 27~~ 14 to 19 illustrate a design, in which annular elements 7 embrace segmental elements 8, in the manner of the preceding design, but annular elements 7 move in the annular guides of one another.

Please delete the ninth and tenth paragraphs on page 6.

Please amend the paragraph bridging pages 6 and 7 as follows:

To reduce friction losses, rolling-contact bearings (for example, as shown in Fig. ~~26~~ 20) are provided in the slits of pivotal elements 2, on the surfaces of the annular guides of segmental elements 8, annular elements 7, rotor covers 14, and on the end-face surfaces of the housing.

Please amend the first through the third paragraphs on page 7 as follows:

Annular elements 7 are provided with reinforcing and cooling plates ~~17~~ 16 (as in Fig. 9). The machine housing has passages for circulating a coolant.

Driving member 1 may be a single plate (Figs. 1 to 7, 12, 13, and 14-~~25~~ 19) or be composed of several plates interconnected at the axis of rotation (Fig. ~~28~~ 22). In each case, it has a two-, three- or multi-lobed configuration in cross-section. A simple single plate is, therefore, a driving member of a "two-lobed" type, with an angle of 180° between the lobes radiating from the center O*, that is, the lobes lie on a single line.

In a driving member made up of three plates, the angle between each two lobes is equal to 120°. This is a "three-lobed" rotor (Fig. ~~28~~ 22).

Please amend the fifth full paragraph on page 7 as follows:

Moreover, the machine rotor has a respective number of segmental parts (elements) 8. In the case of a two-lobed driving member, the rotor has two segmental elements with a flat working surface (Fig. 1). Where the driving member has three or more lobes, the rotor has three or more segmental elements 8, a segmental element having a two-sided working surface (Fig. ~~28~~ 22) and the angle between the sides being equal to the angle between the lobes. With each

segmental element 8 placed between the respective plates of driving member 1 and the above angles being equal, contact is maintained between driving member 1 and the working surfaces of the segmental elements upon rotation of driving member 1.

Please amend the seventh full paragraph on page 7 as follows:

The driving member (Fig. 10) consists of a housing, each part of which comprises communicating inner chambers between the axis of rotation O* and a narrow working surface designed to be in contact with the inner surface of the rotary machine housing, in particular, working combustion chamber 17 and purging chamber ~~24~~ 21. Valves 23 are provided to inject a working fluid into chambers 17 and 21. Passage 19 with valves 24 is provided in each said housing part for discharging the working fluid from driving member 1 through nozzle-like outlet opening 18.

Please amend the paragraph bridging pages 7 and 8 as follows:

The claimed RMKOlgA rotary machine can be used as a basic component of an engine plant shown diagrammatically in Fig. ~~27~~ 21. The engine plant comprises one or more rotary machines 28 operating in a pump mode and one or more rotary machines 29 operating in an engine mode. The outlet of rotary machines 28 operating as pumps is connected to receiver 30 that is, in turn, connected to working chambers 3 and 4 or 5 and 6 of engine-mode rotary machines 29. Direct connection, without using a receiver, can be effected as well. Operation of an engine plant is described below.

Please amend the second and third full paragraphs on page 8 as follows:

~~Superatmospheric~~ High pressure produced alternately in chambers 3 and 4 by gases evolving upon combustion of, for example, a gasoline-air mixture rotates driving member 1 continuously because all essential events, in particular, air suction, air (mixture) compression, mixture combustion causing a high pressure to be built up concurrently in chamber 3 (or 4) (in certain designs, in chambers 5 and 6 and within driving member 1 itself), purging of chambers 3 and 4 or 5 and 6, chambers 17, and passages 19, and exhausting combustion products alternately from the driving member, are completed separately from one another over each 180° of rotation of the driving member (from position of working member 1 at 0:00 hours to position at 6:00 hours). Certain designs of the claimed rotary machine, in particular, a design, in which the mixture is fired alternately in working member 1 or in chambers 5 and 6, are a machine utilizing further the reactive component of a torque produced by the flow of working fluid (combustion products) from nozzle-like exhaust orifices 18 of driving member 1 alternately to working chambers 3 and 4.

When the RMKOlgA rotary machine is used as a pump to compress air or other fluids during rotation of driving member 1 together with the rotor, chambers 3-6 are used as a compressor pump with two compression stages, air is first compressed alternately in chambers ~~2~~ 3,4, whereupon it is transferred through annular elements 7 for successive alternate compression in chambers 5 and 6. At the end of the compression cycle, as pressure reaches the required level, air (working fluid) is transferred for further utilization in the receiver (if it is used) through the end-face covers or other elements.

Please amend the last paragraph under "Areas of Application of the Claimed Rotary Machine" as follows:

Figs. 1-4, 14-17 and ~~20-24~~ 14-19 illustrate the positions of the principal elements of the rotary machine in operation, with the driving member turning through 180 degrees. Further rotation occurs as described hereinbelow.

Please amend the second full paragraph on page 9 as follows:

Working fluid is compressed in chambers 5 (or 6) during rotation of driving member 1 starting from position 0:00 (side A of the driving member) to position 6:00 (side A' of the driving member), when at the same time working fluid is drawn into twin chamber 6 (or 5) (as shown in Figs. 1-4, 14-17 and ~~20-24~~ 14-19). After the working fluid has been compressed in chambers 5 and 6 alternately during rotation of driving member 1, the process develops as follows, according to embodiments:

Please amend the paragraph bridging pages 9 and 10 as follows:

b. Fuel is injected into the compressed working fluid in the working chamber 17 of the driving member 1 (or twin chamber), after or ~~as~~ during the period when the working fluid ~~filled~~ fills this working chamber 17 ~~of driving member 1~~;

Please amend the second and third full paragraphs on page 10 as follows:

c. Fuel is injected into the compressed working fluid in chamber 5 (or 6), beginning with the start of compression (Fig. 1), into chamber 5 (or chamber 6), before ignition, with driving member 1 positioned at 0:00 (in a gasoline-fueled embodiment of the rotary machine), or directly

into the smaller chamber (with driving member 1 positioned at 0:00) shown by interrupted ~~radial~~ line 13 in the diesel-fueled embodiment of the rotary machine.

Note: The shape and volume of the chamber are shown by interrupted ~~radial~~ line 13 (Fig.1) conventionally. The shape and volume of the chamber can be modified for a diesel-fueled embodiment, and have a smaller size and a different shape of segmental elements 8 along the surface of contact with driving member 1 and end-face covers 14 and 15, depending on degree of compression and other factors; and

Please amend the second full paragraph on page 11 as follows:

Working fluid is drawn in and chambers 5 and 6 are filled with fresh working fluid after a successive turn of driving member 1 through 180 degrees (Figs. 1-4, 14-17, and ~~20-23~~ 14-17) via passages extending through housing end-face covers 15 (not shown for convenience).

Please amend the sixth full paragraph on page 12 as follows:

An engine plant (Fig. ~~27~~ 21) comprises rotary machine 28 operating as a two-stage compressor pump to compress air and transfer it to central receiver 30, and them deliver it to rotary machines 29 used as engines, in particular, into their working chambers 3 and 4 or 5 and 6, depending on the preferred operation mode.

Please amend the seventh paragraph on page 14 as follows:

- Compress gas, mixture or air in chamber 5 or 6, jointly with the surrounding elements, in particular, segmental ~~elements~~ rotor parts 8, cylindrical pivotal elements 2, annular sectoral elements 7, housing elements, in particular, flange housing covers 14, and rotor covers 15;